

Name: \_\_\_\_\_

### Remediation – Exponent Rules – Dividing Same Bases

After you have watched the video from the wiki, you should try the following problems and then use the key to check your work. There is not a great way to check these problems with your calculator.

Directions: Please simplify the following.

1.  $\frac{20x^{10}}{-4x^1}$

Think this  $\rightarrow \frac{20}{-4} x^{10-1}$   
Do this  $\rightarrow (-5x^9)$

2.  $\frac{30x^{12}}{-18x^{12}}$

Think this  $\rightarrow \frac{30}{-18} x^{12-12}$   
Do this  $\rightarrow (-\frac{5}{3})$

\* anything over itself is 1  
Also  $x^0 = 1$

3.  $\frac{22r^{10}}{-44r^{-7}}$

Think this  $\rightarrow \frac{22}{-44} r^{10-(-7)}$   
Do this  $\rightarrow (-\frac{1}{2} r^{17})$

4.  $\frac{-22a^9x^5}{11ax^2}$

Think this  $\rightarrow \frac{-22}{11} a^{9-1} x^{5-2}$   
Do this  $\rightarrow (-2a^8x^3)$

5.  $\frac{-17b^9y^5}{17b^9y^4}$

Think this  $\rightarrow -\frac{17}{17} b^{9-9} y^{5-4}$   
Do this  $\rightarrow (-y)$

6.  $\frac{18m^9}{-10m^{-3}}$

Think this  $\rightarrow (\frac{18}{-10}) m^{9-(-3)}$   
Do this  $\rightarrow (-\frac{9}{5} m^{12})$

7.  $\frac{-1b^{-3}1b^7}{4b^2}$

Think this  $\rightarrow \frac{(-1 \cdot 1)b^{-3+7}}{4b^2}$   
Do this  $\rightarrow \frac{-b^4}{4b^2}$

8.  $\frac{8ab^{10}(2a^2b)}{-6ab^{-2}}$

Think this  $\rightarrow \frac{(8 \cdot 2)a^{1+2}b^{10+1}}{-6a^1b^{-2}}$   
Do this  $\rightarrow \frac{16a^3b^{11}}{-6ab^{-2}}$

Then think this  $\rightarrow -\frac{1}{4}b^{4-2}$

Then do this  $\rightarrow (-\frac{1}{4}b^2 \text{ or } -\frac{b^2}{4})$

Then think this  $\rightarrow \frac{16}{-6} a^{3-1} b^{11-(-2)}$

Then do this  $\rightarrow (-\frac{8}{3}a^2b^{13})$